

REMARKS

Claims 1-33 are pending. By this Amendment, no claims are cancelled, claims 17, 19, 21, 23, 25 and 29-33 are amended and no new claims are added.

Interview Summary

Applicant thanks the Examiner for his time and courtesy in the interview of May 14, 2010. During the interview Applicant explained the invention as claimed and how the invention as currently claimed and is patentable over the Lai reference. The Examiner suggested amendments to the claims. The Examiner also identified a typographical error in the Office Action in the identification of a co-pending application related to a provisional double patenting rejection.

Double Patenting

The Office Action provisionally rejected claims 17-21, 23-29 and 31-33 on the grounds of non-statutory obviousness-type double patenting as being unpatentable over claims 20-46 of co-pending Application No. 10/566,009. The Office Action also provisionally rejected claims 17-21, 23-29 and 31-33 on the grounds of non-statutory obviousness-type double patenting over claims 12-29 of co-pending Application No. 10/565,723. While the Office Action identified application 10/566,723, during the telephone interview, the Examiner indicated that this was a typographical error and that the application in question should actually read "10/565,723".

Should either of the co-pending applications issue as a patent, Applicant will file an appropriate terminal disclaimer.

35 U.S.C. § 102

The Office Action rejected claims 25-30 and 33 under 35 U.S.C. § 102(b) as being anticipated by Lai (U.S. Patent 5,0984,916). Applicant respectfully traverses the rejection.

As discussed with the Examiner during the telephone interview, the disclosure of Lai does not disclose or suggest that “wherein the control unit controls the deflecting unit two-dimensionally according to a deflection function such that the locations of optical breakthroughs along a curve on which the optical breakthroughs are sequentially arranged are spaced apart according to a deflection-related angular function, which is non-linear and adapted to the curvature of the cut, such that the locations of optical breakthroughs adjacent along the curve are spaced by the same distance within a tolerance” as recited in independent claim 25. Accordingly, claim 25 should be patentable for at least this reason.

Further, to advance prosecution, Applicant has amended claim 25 to emphasize that the pulsed laser radiation source which focuses laser radiation into the material causes optical breakthroughs *within* the material as opposed to Lai, which relates to surface ablation of the corneal tissue not laser interaction within tissue. Accordingly, claim 25 should be patentable for at least this additional reason. Applicant respectfully requests that the Examiner withdraw the rejection.

35 U.S.C. § 103

The Office Action rejected claims 17-20, 24-30 and 33 under 35 U.S.C. § 103(a) as being unpatentable over Juhasz et al. (U.S. Patent 5,993,438) in view of Lai. As discussed above, the Lai reference does not disclose or suggest:

effecting the two-dimensional deflection such that the locations of optical breakthroughs are spaced apart, along a curve along which the optical breakthroughs are sequentially arranged, according to a deflection-related angular function which is non-linear and adapted to the curvature of the cut such that the locations of adjacent optical breakthroughs along the curve are spaced by substantially the same distance within a tolerance as recited in claim 17. The Juhasz reference also does not disclose or suggest these limitations. Accordingly, independent claims 17 and 25 should be patentable for at least these reasons.

Further, as discussed above, to advance prosecution, Applicant has amended independent claims 17 and 25 to recite additional limitations which are also not disclosed or suggested in either of the Juhasz or Lai references. Accordingly, independent claims 17 and 25 should be patentable for at least this additional reason.

Claims 18-24 depend from claim 17 and should be patentable for at least the same reason as claim 17. Claims 26 -33 depend from claim 25 and should be patentable for at least the same reason as claim 25. Applicant respectfully requests that the Examiner withdraw the rejection.

Claims 18 and 26

Claims 18 and 26 recite the limitation “wherein the tolerance is about 20%.” These limitations are not disclosed or suggested by Lai or Juhasz. Accordingly, claims 18 and 26 should be patentable for at least this additional reason.

Claim 19

Claim 19 recites the limitations “uniformly pulsing the laser radiation; and wherein the two dimensional deflection of the laser radiation in both dimensions is effected in a non-linear manner.” These limitations are not disclosed or suggested by Lai or Juhasz. Accordingly, claim 19 should be patentable for at least this additional reason.

Claim 20

Claim 20 recites the limitations “wherein the deflection is effected about two mutually perpendicular axes, and further comprising the step of guiding the laser radiation along a meander-shaped pattern.” These limitations are not disclosed or suggested by Lai or Juhasz. Accordingly, claim 20 should be patentable for at least this additional reason.

Claim 21

Claim 21 recites the limitations “deflecting the laser radiation at a lower speed, in one dimension, at the periphery of a region in which the cut is produced, than at the center of the region.” These limitations are not disclosed or suggested by Lai or Juhasz. Accordingly, claim 21 should be patentable for at least this additional reason.

Claim 22

Claim 22 recites the limitations:

wherein the cut is substantially spherically curved with a radius R, the laser radiation is incident in the material along a main axis of incidence and is biaxially deflected along an x-axis and a y-axis in a plane perpendicular to said main axis of incidence, wherein a step width dx between locations on the curve of adjacent optical breakthroughs is set in the plane in x-direction according to:

$$dx = D \cdot \frac{R1}{\sqrt{R1^2 - x^2}},$$

wherein D designates the distance between centers of the optical breakthroughs and

$$R1 = R \cdot \cos(\arctan \frac{y}{R})$$

These limitations are not disclosed or suggested by the Lai or Juhasz references. Accordingly, claim 22 should be patentable for at least this additional reason.

Claim 23

Claim 23 recites the limitations “altering a pulse rate of the laser, at the periphery of a region in which the cut is produced such that the pulse rate of the laser radiation is higher than the pulse rate at the center of the cut.”

These limitations are not disclosed or suggested by the Lai or Juhasz references. Accordingly, claim 23 should be patentable for at least this additional reason.

Claim 24

Claim 24 recites the limitations:

wherein the two-dimensional deflection is effected according to two deflection functions associated with the two-dimensional deflection, wherein one of said two deflection functions is parameterized with the coordinate to which the other of said two deflection functions is assigned.

These limitations are not disclosed or suggested by the Lai or Juhasz references.

Accordingly, claim 24 should be patentable for at least this additional reason.

Claims 27-33

Claims 27-33 recite analogous limitations related to the apparatus claimed as recited in method claims 19-24. These limitations are not disclosed or suggested in either Lai or Juhasz. Accordingly, each of these claims should be patentable for at least these additional reasons. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejections.

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'P. Onderick', with a long horizontal flourish extending to the right.

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